

REMARKS/ARGUMENTS

Amendments to the Claims

Claim 26 has been amended for a typographical error. Claims 27 and 28 have been newly entered, and are fully supported by spec paragraph [0018]. No new matter is
5 introduced.

Claim Rejections – 35 USC 103

Claims 1-3, 5-7, 9-10, 12, 14-16, 18-20, 22-23 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Awater et al. (US 2005/0152317, hereinafter Awater) in view of
10 Gummadi et al. (US 7,136,436, hereinafter Gummadi) and further in view of Barton et al. (US 7,227,831, hereinafter Barton). The applicant respectfully traverse the rejection made by Examiner for the reasons below.

Response:

15 Claim 1

Regarding claim 1, none of Awater, Gummadi and Barton discloses the limitation:
“computing **a first correlation value** representing the correlation between a plurality of first signals of a first symbol and a plurality of second signals of a second symbol
previous to the first symbol, wherein the first and the second signals are both
20 transmitted via the same sub-carriers; computing **a second correlation value** representing the correlation between the first signals and a plurality of third signals of a third symbol
next to the first symbol, wherein the first and the third signals are both transmitted via the same sub-carriers” as recited in the claim 1. Examiner states that Awater fails to teach that the third signal is placed next to the first signal (not previous to first symbol) for
25 calculating second correlation value, and deems that Gummadi discloses that the correlation value is generated by comparison of samples of a period with samples in another adjacent period (abstract; column 6, line 56-67 ”adjacent means previous or after”). The applicant

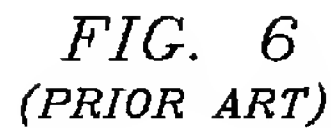
extracts some descriptions of Gummadi below, referring to column 6, line 62- column 7, line 2:

5 *The correlation structure 600 displayed in FIG. 6 compared a sample (or samples) from a single period with a sample (or samples) in another period that is **adjacent to the** single period. The correlation structure 600 performs the same type of **correlating a** sample value from one period with a corresponding sample value in **an adjacent period** for each of the remaining correlations in the correlation structure 600.*

10 Gummadi's correlation structure 600 performs correlating a first value from a first period with a second value corresponding to an adjacent period. The applicant points out that though Gummadi discloses this term "adjacent period", **Gummadi fails to disclose that adjacent periods comprising both previous periods and after periods.** Please refer to Gummadi's column 5, lines 23-25, column 6, lines 19-24 and FIG. 6:

15 *Referring to FIG. 5, a diagram illustrates the concatenation of the short sequence field and the long sequence field into what is **commonly referred to as a PLCP preamble** 500. A PLCP preamble is at the beginning of each PLDU. According to the **IEEE 802.11a technical standard**, the PLCP preamble 500 is used for automatic gain control (AGC) convergence, diversity (antenna) selection, timing acquisition, coarse and fine*
20 *frequency acquisition, and channel (frequency response) estimation. **The PLCP preamble 500 comprises the short and the long sequences.***

25 *FIG. 6 displays a sequence of six **correlations**, each shown as an **inverted U-shaped line**, originating from one period of a short sequence and ending at another. For example, a correlation 610 starts at a period 612 (labeled as P10) of the short sequence and ends at another period 614 (P9) of the short sequence.*



Note is respectfully made by the applicant that in accordance with the IEEE 802.11a standard well-known to those skilled in the art, the short sequence in the PLCP preamble precedes the long sequence. Therefore, the period P9 in Gummadi Fig. 6 is prior to the period P10 in Gummadi Fig. 6; on the analogy of this, the period P8 in Gummadi Fig. 6 is prior to the period P9 in Gummadi Fig. 6, and so on.

The applicant points out that Gummadi's correlation 610 is obtained from correlating a first value from a first period (e.g. Gummadi's P10) with a second value corresponding to a **previous** period (e.g. Gummadi's P9). The period having smaller reference numeral (Gummadi's P9) is **previous** to the period having bigger reference numeral (Gummadi's P10). In addition, Gummadi's other 5 correlations are all obtained from correlating a value from a period (e.g. Gummadi's P10) with another value corresponding to a **previous** period (e.g. Gummadi's P9). The applicant, therefore, asserts that Gummadi's adjacent period merely indicates a previous period, **one direction in time domain**, rather than indicates previous and after periods, **two directions in time domain**. In short, upon careful review of Gummadi's teachings, the applicant points out that the adjacent-period-based correlation taught by Gummadi is a one-directional correlation computation based on a current period and a previous period.

The applicant, therefore, asserts that the combined teaching of Awater, Gummadi and Barton fails to disclose the limitation: “computing **a first correlation value** representing

the correlation between a plurality of first signals of a first symbol and a plurality of second signals of a second symbol **previous to the first symbol**, wherein the first and the second signals are both transmitted via the same sub-carriers; computing **a second correlation value** representing the correlation between the first signals and a plurality of third signals of a third symbol **next to the first symbol**, wherein the first and the third signals are both transmitted via the same sub-carriers” as recited in applicant’s claim 1.

For at least the reasons stated above, the applicant believes claim 1 is neither taught nor suggested by the cited references, and should be found allowable over the cited references. The rejection based thereon should be traversed.

Claims 2-3, 5-7, 9-10, and 12

The claims 2-3, 5-7, 9-10, and 12 are all dependent upon claim 1, and should be allowable if claim 1 is found allowable.

Claim 14

In light of above arguments of claim 1, the applicant believes that claim 14 should be allowable as well.

Claims 15-16, 18-20, 22-23 and 25

The claims 15-16, 18-20, 22-23 and 25 are all dependent upon claim 14, and should be allowable if claim 14 is found allowable.

Claim Rejections – 35 USC 103

Claims 8, 11, 21 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Awater et al. (US 2005/0152317, hereinafter Awater) in view of Gummadi et al. (US 7,136,436, hereinafter Gummadi) and further in view of Barton et al. (US 7,227,831, hereinafter Barton) as applied to claims 1, 7, 10, 14, 20, and 23 above, and further in view of

Narasimhan (US 7,218,691). The applicant respectfully traverse the rejection made by Examiner for the reasons below.

Response:

Claims 8 and 11

- 5 The claims 8 and 11 are both dependent upon claim 1 and should be allowable if claim 1 is found allowable.

Claims 21 and 24

- 10 The claims 21 and 24 are both dependent upon claim 14 and should be allowable if claim 14 is found allowable.

Claim Rejections – 35 USC 103

- 15 Claims 4, 13, 17 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Awater et al. (US 2005/0152317, hereinafter Awater) in view of Gummadi et al. (US 7,136,436, hereinafter Gummadi) and further in view of Barton et al. (US 7,227,831, hereinafter Barton) as applied to claims 1, 7, 10, 14, 20, and 23 above, and further in view of Mui (US 6,690,739). The applicant respectfully traverse the rejection made by Examiner for the reasons below.

Response:

- 20 Claims 4 and 13

 The claims 4 and 13 are both dependent upon claim 1 and should be allowable if claim 1 is found allowable.

Claims 17 and 26

- 25 The claims 17 and 26 are both dependent upon claim 14 and should be allowable if claim 14 is found allowable.

Patentability of New Claims 27 and 28

Claim 27

Regarding claim 27, the cited references, alone or in combination, fail to disclose, teach, or suggest the limitation: “delaying the timing of the boundary when the first correlation value is greater than the second correlation value” or “advancing the timing of the boundary when the second correlation value is greater than the first correlation value” as recited in the newly added claim 27. Examiner deems that neither Awater nor Gummadi discloses adjusting the timing of boundary according to the comparison result, and deems that Barton discloses a system and method for synchronizing OFDM signal where the timing of the signal is adjusted to according to the conditions to get synchronization (FIG. 3-5; column 2, lines 30-40; column 3, lines 18-28). Please refer to Barton’s column 3, lines 19-25:

*In the preferred embodiment, however, the **timing of the synchronization pulse is altered only if certain conditions are met**. For example, the timing can be altered only if the current timing is found to be in error a predetermined number of times, and/or only if the current error exceeds a predetermined amount.*

Barton merely discloses altering the timing under certain conditions, but fails to disclose detailed altering techniques corresponding to certain specific conditions. The applicant, therefore, asserts that Barton fails to disclose “delaying the timing of the boundary when the first correlation value is greater than the second correlation value” or “advancing the timing of the boundary when the second correlation value is greater than the first correlation value” as recited in the claim 27. After carefully review, none of the cited references discloses the claimed limitation. The applicant, therefore, believes that the newly added claim 27 is not taught or suggested by the cited references, alone or in combination, and should be found allowable over the cited references.

Claim 28

In light of above arguments of claim 27, the applicant believes that claim 28 should

be allowable as well.

Conclusion

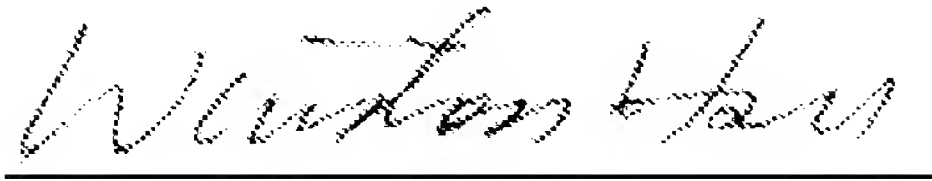
For the reasons as described above, Applicant believes that Claims 1 and 14 are
5 allowable over the cited references. Insofar as Claims 1 and 14 are allowable, Claims
2-13, Claims 15-26, and Claims 27-38 are all dependent upon respective Claims 1 and 14
including every claimed element thereof, are also allowable on their own merits in
claiming additional limitations not included in Claims 1 and 14.

Withdrawal of the rejections and allowance of the claims, are respectfully requested.
10 Applicant has made every effort to place the present application in condition for
allowance. It is therefore earnestly requested that the present application, as a whole,
receive favorable consideration and that all of the claims be allowed in their present form.

Should the Examiner feel that further discussion of the application and the
Amendment is conducive to prosecution and allowance thereof, please do not hesitate to
15 contact the undersigned at the address and telephone listed below.

Appl. No. 10/710,539
Amdt. dated March 21, 2008
Reply to Office action of December 21, 2007

Sincerely yours,



Date: 03.21.2008

5 Winston Hsu, Patent Agent No. 41,526
P.O. BOX 506, Merrifield, VA 22116, U.S.A.
Voice Mail: 302-729-1562
Facsimile: 806-498-6673
e-mail : winstonhsu@naipo.com

10

Note: Please leave a message in my voice mail if you need to talk to me. (The time in D.C. is 12 hours behind the Taiwan time, i.e. 9 AM in D.C. = 9 PM in Taiwan.)